

**OCONEE COUNTY PROCUREMENT OFFICE
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WALHALLA, SC 29691**

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**ADDENDUM NO. 2
ITB 16-14**

**PHASE 1 & PHASE 2 MASS GRADING IMPROVEMENTS
FOR OCONEE INDUSTRY AND TECHNOLOGY PARK**

OPENING DATE: MARCH 1, 2017 AT 2:00 PM - UNCHANGED

This Addendum #2 contains answers to all questions received by the deadline for questions, February 22, 2017 at 2:00pm. The Bidder shall include a copy of this Addendum No. 2 signed with the bid and acknowledge addendum on the bid form.

Question 1: Could the bids be emailed?

Answer 1: No, only hard copies of the bids will be accepted.

Question 2: Is the contractor required to provide a field office for the owner or engineer?

Answer 2: No.

Question 3: Phase 1 appears to have excess material. Can this be placed in the future fill area for Phase 2?

Answer 3: Yes, the excess material is to be placed in the "stockpile" area shown in the Phase 1 Plans. The fill is to be compacted as Specified in Section 2204—Earthwork Part 3.9 Field Quality Control.

Question 4: If unsuitable material is encountered will the contractor be able to leave it on site?

Answer 4: Unsuitable material, if encountered, can be disposed of onsite at a location approved by the Owner and Engineer.

Question 5: Please confirm owner will allow burning onsite.

Answer 5: Oconee County does not have any restrictions on burning. However, contractors are required to notify the South Carolina Forestry Commission and follow their instructions and guidelines for burning. See attached document from their web page. Contractor is to notify Engineer before conducting burning activities.

Question 6: Confirm if the owner will provide material testing. Special Conditions SC-5 states contractor to provide material testing, but specification 01410 Section 1.4 Item A says owner is to provide material testing.

Answer 6: The Owner will provide material testing.

Question 7: Specials Conditions SC-7C state builders risk insurance is required. Construction of a building/structure is not part of this scope. Confirm builders risk is not required. It is not needed for site work construction.

Answer 7: Builders Risk Insurance is not required.

Question 8: Supplementary Conditions Item SC6.02B state that weekend work must be approved by owner. Confirm the owner will allow work on Saturdays as part of the standard work week. And confirm if the owner will allow work on Sundays if needed for the schedule.

Answer 8: Saturday work will be allowed by the Owner as part of the standard work week. Sunday work will be allowed, but will need to be approved in advance by the Owner. Work on Sunday will only be allowed after 1:00 pm.

Question 9: Confirm which section governs; Special Conditions Section SC-23 or Supplementary Conditions Section SC-6.12.B

Answer 9: Special Conditions Section SC-23 governs. Contractor is to provide a record drawing survey of the pond and stormwater system. Record Drawing should include elevations, pond, top of bank, toe of slope and emergency spillway of the pond, pipe sizes, elevations and dimensions of outlet structure including weir and orifice dimensions and elevations. Record Drawing is to be tied to South Carolina State Plane Coordinate system and must be certified and signed by registered Surveyor in the State of South Carolina.

Question 10: Supplementary Conditions section SC-6.13.A.3, second paragraph states Engineer may require enclosing or special protection from weather. Does this refer to a building or to site work? If it pertains to site work, what could be the required protection?

Answer 10: Strike out words "deemed necessary by Engineer" from Supplementary Conditions Section SC-6.13.A.3, Paragraph 2.

Question 11: Confirm the compaction requirements for the project. The specifications state unpaved areas are to be compacted to 90% standard proctor. With expectation that buildings and roads will be built in the future should the compaction be as if all area could be under pavement?

Answer 11: In accordance with the Geotechnical Engineer, all areas are to be compacted to 95% standard proctor in accordance with ASTM D698. The areas below the Future Road "A", Road "B" and Road "C" are to be compacted to 98% compaction for the last 12" of subgrade. Roadway compaction should be 30' feet wide measured from each centerline shown on the plans.

Question 12: Special Conditions SC-16 states itemized quantities will be paid as a unit price per what is needed to complete the project. Specification 02210 Soil Erosion Control Section 1.6 states most of the erosion control items are a lump sum price. Please confirm which section governs.

Answer 12: The contract is Lump Sum. The quantities shown are estimates for information purposes only.

Question 13: Will rain days and the subsequent days to dry out before working can resume extend the contract time day for day?

Answer 13: Per Section 00506 – Standard Form Agreement, Article 3.1, six (6) rain days are included for Phase 1 and twenty (20) rain days are included in the Phase 2 contract time. Time delays due to rain in excess of the above days shall be reported by the Contractor to the Engineer in writing, within 30 days of each event. Extension to the contract time due to time delays associated with rain will be evaluated by the Engineer and Owner.

Question 14: Phase 1 - The bid proposal for (Phase 1) lists the number of stone check dams as 5 each. 10 rock check dams are shown on sheet EC2.1. How will the contractor be compensated for the additional 5 stone check dams?

Answer 14: The intent of the Phase 1 Plans is to show a total of 5 check dams and this is the quantity that should be bid. The SCDHEC symbol for a check dam actually appears to be two check dams.

Question 15: Phase 1 - The bid proposal form (Phase 1) lists the 15” and 18” pipe as HDPE. Sheet C2.1 calls both pipe runs to be CMP while the sediment basin detail on sheet EC4.4 lists the outlet pipe as RCP. Which pipe product are we to bid?

Answer 15: The pipe will be installed for temporary purposes. The material can be installed as CMP, HDPE or RCP, sufficient to handle construction access to the site.

Question 16: What type of North American Green Erosion Control Blanket is to be used?

Answer 16: See Specification Section 02210 – Soil Erosion Control, Section 2.6 Erosion Control Blanket.

Question 17: There is not a pay item for sodding. Will sodding be paid for in the grassing line item? Are the slopes of the pond the only thing to get sodded?

Answer 17: There are no areas that are intended to be sodded. All areas are to be seeded in accordance with Specification Section 02902 – Grassing.

Question 18: Phase 2 - What is to get sodded in this phase?

Answer 18: No areas are to be sodded. See answer above to Question 17.

Question 19: The initial erosion control plans show the Sediment Basin 1-3 and Pond 1 being installed first. Will the contractor be allowed to place the excavation out of the ponds in the fill areas onsite or will the contractor have to stockpile the cut from the ponds and then touch it again to place as onsite fill?

Answer 19: The Contractor will be allowed to place the fill in the immediate fill areas adjacent to the basins as necessary to completed the construction of the pond and sediment basins. Diversions/swales must be in place to divert all runoff from these areas to the pond/sediment basin to which it drains.

Question 20: Will the contractor be allowed the clear and grub the entire 110 acres at one time?

Answer 20: The contractor is to follow the phasing schedule as shown on the Erosion Control Plan Sheets. The entire site can be cleared once the perimeter BMP’s are installed and pond/sediment basins are installed.

Question 21: What are the limits of respreading topsoil? The plans show the centerline of the future roads within the park. Does the Owner still want to respread topsoil in these areas since the road will not be constructed yet?

Answer 21: Topsoil is to be respread in all areas with the exception of the building pad closest to future Road "A", and within the future Road A, Road B and Road C limits (30' width).

Question 22: Is there an address for the project site?

Answer 22: 1000 Innovation Way, Westminster, SC 29693 is the address of the existing industry, Baxter Manufacturing and Hi-Tech Mold Carolina, inside the park. This is the only address for the park as it is currently the only occupant; however, do not enter the property of the existing facility within the park.

Question 23: Phase 2 - Is the RCP used on the project to be O-Ring with rubber gaskets or tongue and groove with conseal? If O-Ring, may tongue and groove with conseal be substituted for this pipe?

Answer 23: O-Ring Reinforced Concrete Pipe with rubber gaskets is to be provided.

Question 24: Is there a more up-to-date boring location sheet that shows the current site plan with the boring data? The geotechnical report indicates that existing cultivated soils are not suitable for building support and should be undercut from beneath any planned building areas. It looks as though both building pads lay within the limits of the existing cultivated soils. It would be helpful to have this information to better dictate the limits of undercut since unsuitable soil removal/replacement and rock excavation will not be paid for by the Owner.

Answer 24: Terracon is currently performing an additional geotechnical exploration on the site. It was anticipated to be completed by Monday, February 20, 2017, but due to setbacks, the work is currently not completed. 25 Boring Logs have been provided showing the infield data collected. The soil boring logs and location map are enclosed. The borings completed are highlighted on the Boring Location Map in yellow. Three of the borings encountered rock; however, only the rock in Boring B-6 was above the proposed finished grade elevation. The borings that encountered rock are highlighted in green. The new geotechnical report will be provided as soon as possible. Bid earthwork as unclassified.

Question 25: Since we are required to have 2 bid Bonds One for Phase 1 and One for Phase 2 should we enclose each bid in a separate envelope?

Answer 25: The Bids are to be submitted in the same envelope.

Question 26: Would it be possible to include a Unit Price to Bid for Rock Excavation? This is the normal practice when no Rock quantity is given and would apply to each bidder.

Answer 26: No, the project is to be bid as Unclassified. No separate unit payment will be made for rock removal.

Question 27: Section 01135 Bidder's Qualifications, is this to be submitted with the bid?

Answer 27: Yes, since there will be a short time frame between the bid opening and county Council Meeting, please provide a completed copy of Specification Section 01135 - Bidder's Qualifications with the Bid.

Question 28: After reviewing the earthwork for the Phase 2 bid, would the Engineer allow the contractor to adjust grades in order to produce a balanced site? What would be the maximum that the contractor could raise or lower the site in order to balance it and not affect utilities?

Answer 28: If the earthwork is determined to be unbalanced, the material can either be stored or found onsite, at locations as approved by the Owner, Engineer and Geotechnical consultant.

Question 29: Will a Plan Holder's List be provided?

Answer 29: The updated Plan Holder's List is enclosed.

END ADDENDUM NO. 2

Dated: February 23, 2017

Please acknowledge receipt of Addendum by signing and attaching to your bid.

BY: _____ DATE: _____
(Contractor)

(Signature) (Title of Signing Officer)

Frequently Asked Questions about Outdoor Burning in South Carolina

Q: What can I legally burn?

A: Vegetative debris, including limbs, leaves, and grass clippings can be burned. If it grows on your property, you can burn it.

Q: What items cannot be legally burned?

A: You cannot burn household garbage, plastics, shingles, tires, lumber, rubber, or anything other than plant growth that originates on the site.

Q: What do I have to do before I conduct an outdoor burn?

A: State law requires that you notify the Forestry Commission (see below) and follow certain precautions. To implement the proper precautions, you must clear a firebreak around the burn site and have the right equipment (water hose, tractor, shovel, hand tools, etc) available to keep the fire under control. You must also stay with the fire until it is completely safe.

All burning **MUST** comply with regulations established by the SC Department of Health and Environmental Control. To find out more about DHEC regulations and outdoor burning, follow this link: <http://www.scdhec.gov/environment/baq/OpenBurning/>

In addition to state laws regulating outdoor burning, there may be other local ordinances that apply in your area. Be sure to check with your local fire department or county fire marshal before burning.

Q: What time of day can I burn?

A: The law does not restrict the time of day you can burn. However, burning during the late afternoon or at night, temperature inversions can cause smoke to linger close to the ground, where it may impact your neighbors or nearby roads. In general, it is best to burn between 10 am and 3 pm. This time of day is best for smoke dissipation, and will reduce the risk of negatively impacting your neighbors.

Q: How do I notify the Forestry Commission?

A: The toll-free numbers below allow you a quick, easy way to make your yard debris burning notification. Just dial the appropriate number, listen to the message, and leave your name, address and phone number. The notification law does not apply within town or corporate limits.



South Carolina
Forestry Commission

Land Clearing, Construction, and Other Burning Information

Notification Procedure

If adjacent to woods, brush, or grassland, state law requires you notify the Forestry Commission before burning any vegetative materials from land clearing activity or right-of-way maintenance. Also included is any outdoor burning conducted for training purposes. The state notification law does not apply within town or city limits, but certain city ordinances may regulate the burning.

All burning of this type must comply with DHEC Regulation 61-62.2. You should make sure you understand the requirements prior to calling for notification. Forestry Commission dispatchers are not authorized to interpret this regulation. If you need an explanation of Regulation 61-62.2, call the nearest office of the SC Department of Health and Environmental Control.

The toll-free numbers below allow you a quick, easy way to make your burning notification. Just dial the appropriate number, listen to the message, and leave your name, address and phone number.



County	Number	County	Number
Abbeville	1-800-895-7056	Greenwood	1-800-956-5337
Aiken	1-800-895-7057	Hampton	1-800-956-5403
Allendale	1-800-895-7058	Henry	1-800-956-5404
Anderson	1-800-895-7059	Jasper	1-800-956-5405
Saraberg	1-800-895-7060	Kershaw	1-800-705-8609
Spartanburg	1-800-895-7061	Lancaster	1-800-705-8610
Sumter	1-800-895-7062	Laurens	1-800-705-8611
York	1-800-895-7063	Lee	1-800-705-8612
Calhoun	1-800-895-7064	Lexington	1-800-705-8613
Charleston	1-800-885-3593	Marion	1-800-705-8614
Cherokee	1-800-885-3594	Marlboro	1-800-705-8615
Chesler	1-800-885-3595	McDermock	1-800-705-8616
Cherokee	1-800-885-3596	Rowberry	1-800-705-8617
Clarendon	1-800-885-3597	Oconee	1-800-705-8618
Colleton	1-800-885-3598	Orangeburg	1-800-517-9636
Darlington	1-800-885-3743	Pickens	1-800-517-9637
Dillon	1-800-885-3744	Richland	1-800-517-9638
Durham	1-800-885-3745	Saluda	1-800-517-9639
Edgefield	1-800-885-5138	Spartanburg	1-800-517-9640
Fairfield	1-800-885-5162	Sumter	1-800-517-9641
Florence	1-800-885-5163	Union	1-800-517-9642
Georgetown	1-800-885-5256	Williamsburg	1-800-517-9643
Greenville	1-800-885-5299	York	1-800-517-9644

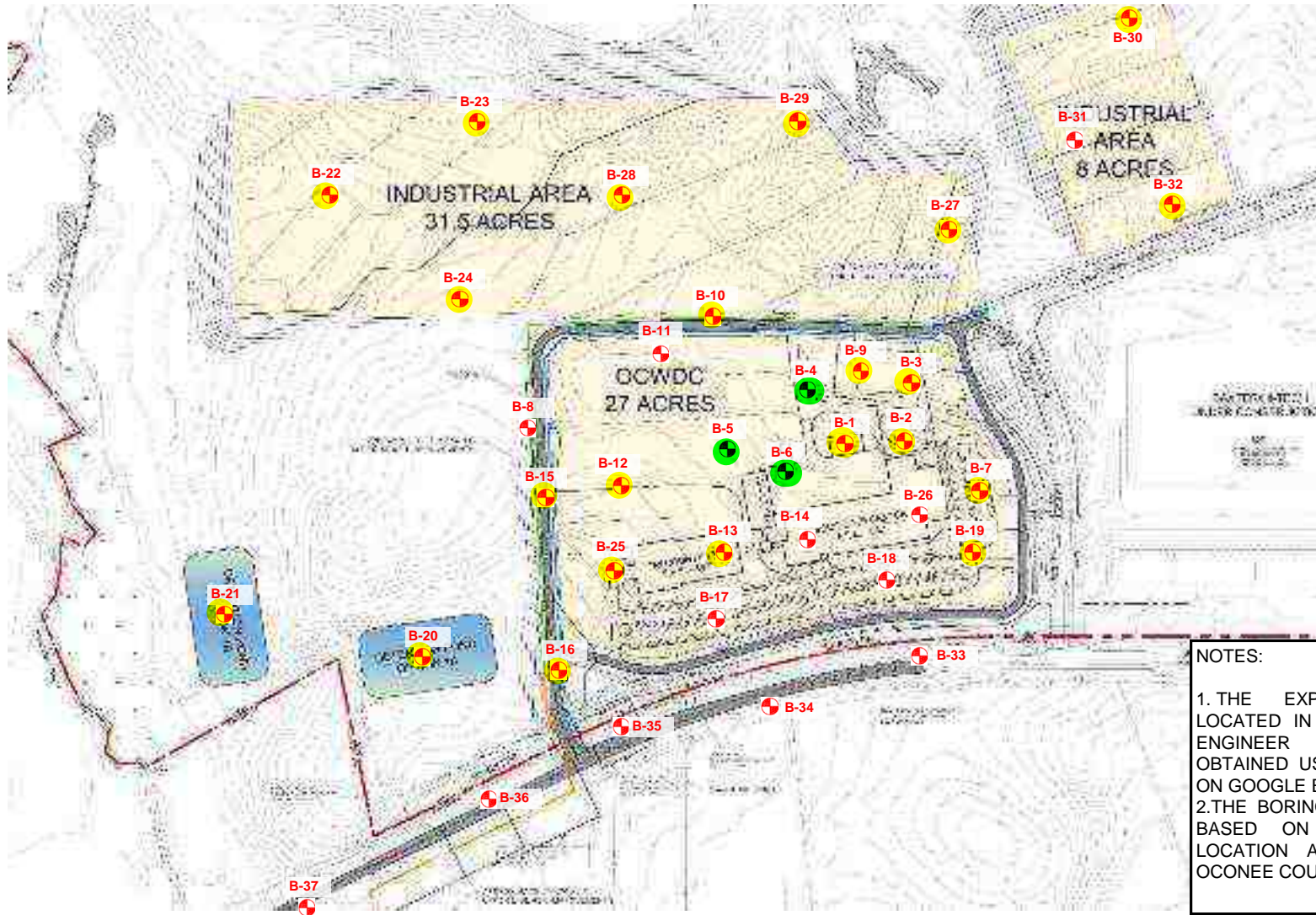
Laws and Regulations

Outdoor Burning/ Frequently Asked Questions

[SCFC Home](#) / [News and Events](#) / [Fire and Burning Information](#) / [Policies and Plans](#) / [Landowner Services](#) / [Seedling Sales](#) / [Forest Management](#) / [Tree Care and Community Forestry](#) / [Forest Health](#) / [Resource Development](#) / [State Forest Recreation](#) / [Law Enforcement](#) / [Information Technology](#) / [Education Programs](#) / [Hiring and Careers](#) / [Publications and Links](#)
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LEGEND:

 SPT BORING (APPROX. LOCATION)



PROPOSED BORING LOCATIONS	
BORING NO.	DEPTH
B-1 to B-2	40 feet
B-4, B-6, B-16	35 feet
B-3, B-5, B-7, B-9, B-15, B-19, B-22, B-26, B-27, B-29	25 feet
B-10, B-11, B-13, B-14, B-31	20 feet
B-18, B-30	15 feet
B-12, B-17, B-20, B-21, B-28, B-33 to B-37	10 feet
B-8, B-23 to B-25, B-32	5 feet

NOTES:

1. THE EXPLORATION POINTS WERE LOCATED IN THE FIELD BY A TERRACON ENGINEER USING GPS COORDINATES OBTAINED USING OVERLAY OF SITE PLAN ON GOOGLE EARTH™.
2. THE BORING LOCATION PLAN PREPARED BASED ON PROPOSED DEVELOPMENT LOCATION AND LAY-OUT PROVIDED BY OCONEE COUNTY.



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	ND	Project No.	86175002
Drawn by:	MM	Scale:	N.T.S.
Checked by:	ND	File Name:	
Approved by:	ND	Date:	02/02/2017

Terracon
Consulting Engineers & Scientists

72 Pointe Circle Greenville, South Carolina 29615
PH. (864) 292-2901 FAX. (864) 292-6361

BORING LOCATION PLAN

Oconee Industrial & Technology Park
SC-11
Westminster, Oconee County, South Carolina

Exhibit	A-2
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Soil Boring Log



Boring ID: **B-1**

Client:	Date: 2-16-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 4th ^{1st} main ^{main} road	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 37.69883	Depth of Boring: 40 Feet	<input checked="" type="checkbox"/> HSA
Longitude: 88.05225	Water Level: _____ Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit						
			Topsoil	Gravel	Asphalt	Concrete	NA		
0			4"						
1	2.5	4 4 4	Fill silty ^{sandy CL} sands Red				F-C	w/ root	
3.5	5	5 8 9	Fill ^{same} silty ^{sandy ML} sands Red				F-C	w/ clay	
6	7.5	8 11 15	Residual ^{same} silty ^{sandy ML} sands Red				F-C		
8.5	10	5 7 8	Residual silty ^{SC} sands ^{orange} Red white				Fine		
13.5	15	4 3 3	Residual silty sands ^{dark pinkish brown} light Red/white					F	
18.5	20	2 3 3	Residual silty sands white ^{orange} light Brown					F	
23.5	25	4 4 4	Residual silty sands white ^{light orange} brown					F	
28.5	30	2 2 1	Residual silty sands dark Red ^{orange} Brown/Black					F	
33.5	35	17 24 23	Residual silty sands grey ^{dark} ^{orange} brown				Fine	w/ m	
38.5	40	7 2 15	Residual silty ^{sandy ML} sands ^{orange} Brown/Black				Fine	w/ m	
43.5	45		Boring terminated @ 40' No bedrock						

Notes:

Soil Boring Log



Boring ID: B-2	Date: 2-17-13	Drilling Method
Client:	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Project Number: 36175002	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Site Location: OCG Innovation	Depth of Boring: 40 Feet	<input checked="" type="checkbox"/> HSA
Latitude: 37.61936	Water Level: Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Longitude: 83.102251	Well Installed: No	<input type="checkbox"/> Air Rotary
Logged By: Nate Hawthorne	Drill Rig: GP#738	<input type="checkbox"/> Rock Core
Driller: Brett Burnette		

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit				
			Topsoil	Gravel	Asphalt	Concrete	NA
0			Topsoil				
1	2.5	4 4 5	Fill silty sand w/ red			F-C	w/ root
3.5	5	6 7 11	Fill silty ML Red			F-C	w/ mica
6	7.5	7 10 14	Fill silty sand Red			F-C	
8.5	10	4 5 9	Residual silty sand Red				Fine grain
13.5	15	2 2 7	Residual silty sands Red				white Fines
18.5	20	3 3 3	Residual silty sands Red				Fine
23.5	25	4 4 3	Residual silty sands Red				Fine
28.5	30	1 3 3	Residual silty sand dark Red				black
33.5	35	19 17 28	Residual silty sands grey				Fine
38.5	40	5 7 15	Residual silty sands brown				white
43.5	45		Boring terminated at 40' No bedrock				

Notes:

Soil Boring Log



Boring ID: **B-3**

Client:	Date: <u>2-16-17</u>	Drilling Method
Project Number: <u>86175002</u>	Auger/WR Refusal: <u>NA</u> ✓	<input type="checkbox"/> Hand Auger
Site Location: <u>1000 Innovations</u>	Boring Diameter: <u>6 inches</u>	<input type="checkbox"/> DPT
Latitude:	Depth of Boring: <u>25 feet</u>	<input checked="" type="checkbox"/> HSA
Longitude:	Water Level: <u>Feet</u> ✓ No water	<input type="checkbox"/> Mud Rotary
Logged By: <u>Nate Hawthorne</u>	Well Installed: <u>No</u>	<input type="checkbox"/> Air Rotary
Driller: <u>Brett Burnette</u>	Drill Rig: <u>GP#738</u>	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			Topsoil Gravel Asphalt Concrete NA
1	2.5	3 4 4	4 Fill silty sands Red <u>Sandy CL</u> F-C x m/s
3.5	5	4 4 5	Residual silty sands Red <u>SM</u> Fine w/ m/s
6	7.5	4 5 5	Residual silty sand dark Red <u>Black</u> Fine
8.5	10	4 4 5	Residual silty sands dark Red <u>black</u> Fine m/s
13.5	15	10 2 9	Residual silty sands Red, Black <u>gray</u> Fine m/s
18.5	20	5 3 3	Residual silty sand light Brown, <u>white</u> Fine
23.5	25	3 3 4	Residual silty sands light Brown, <u>white</u> Black Fine
28.5	30		Boring terminated at 25' No Bedrock
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: B-21	Date: 2-11-17	Drilling Method
Client:	Auger/WR Refusal: 28 feet NA	<input type="checkbox"/> Hand Auger
Project Number: 86175002	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Site Location: 1009 Innovation	Depth of Boring: 35	<input checked="" type="checkbox"/> HSA
Latitude: 39.69849	Water Level: Feet No water	<input type="checkbox"/> Mud Rotary
Longitude: 83.05333	Well Installed: No	<input type="checkbox"/> Air Rotary
Logged By: Nate Hawthorne	Drill Rig: GP#738	<input type="checkbox"/> Rock Core
Driller: Brett Burnette		

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit					
			Topsoil	Gravel	Asphalt	Concrete	NA	
0			2					
1	2.5	3 H 3	Fill	sandy cl				F-C
3.5	5	4 5 7	Fill	sandy ML	Red			F-C w/clay
6	7.5	5 10 12	Residual	sandy ML	light red			F-C
8.5	10	5 14 16	Residual	SM	light red			F-M
13.5	15	3 14 15	Residual	silty sands	dark red			Fine
18.5	20	10 12 22	Residual	silty sands	dark brown/black			Fine
23.5	25	21 15 5"	Residual	silty sands	grey, white, orange			Fine
28.5	30		Auger refusal at 28 feet due to bedrock. Boring refusal at 28 feet due to bedrock.					
33.5	35							
38.5	40							
43.5	45							

Notes:

Soil Boring Log



Boring ID: B-5		Date: 2-20-17	Drilling Method
Client:	Project Number: 36175002	Auger/WR Refusal: 21 NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 innovation	Boring Diameter: 6 inches	Depth of Boring: 25	<input type="checkbox"/> DPT
Latitude: 34.69733	Water Level: No water	Well Installed: No	<input checked="" type="checkbox"/> HSA
Longitude: 83.05263	Drill Rig: GP#738		<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne			<input type="checkbox"/> Air Rotary
Driller: Brett Burnette			<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			Topsoil Gravel Asphalt Concrete NA
1	2.5	3 4 4	Fill ^{sandy} silty sands Red F-C w/ root
3.5	5	4 6 7	Residual ^{same} sandy ML Red F-C w/ muscovite
6	7.5	6 7 7	Residual ^{same} sandy ML light red F-C w/ muscovite
8.5	10	6 6 8	Residual ^{same} sandy ML light red F-C w/ muscovite
13.5	15	3 4 2	Residual ^{sandy ML} silty sands reddish orange F-C w/ muscovite
18.5	20	8 17 35	Residual ^{sandy ML} silty sands ^{orange} brown Red white F-C w/ muscovite
23.5	25		
28.5	30		Boring refusal at 21 feet due to bedrock
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: B-6
Client: _____ **Date:** 12-20-17
Project Number: 86175002 **Auger/WR Refusal:** 23 NA
Site Location: 1000 Innovation **Boring Diameter:** 6 inches
Latitude: 39.69832 **Depth of Boring:** 35 feet
Longitude: 83.05248 **Water Level:** _____ Feet No water
Logged By: Nate Hawthorne **Well Installed:** No
Driller: Brett Burnette **Drill Rig:** GP#738

Drilling Method

Hand Auger
 DPT
 HSA
 Mud Rotary
 Air Rotary
 Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger <input type="checkbox"/> Macro Core <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby Tube

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

1
2
3
4
5
6

Depth (ft)	Recovery (inches)	Blows per 6"	Soil Description	Gravel	Asphalt	Concrete	NA	
0			Topsoil					
1	2.5	4 14 11	Fill silty sands Red			F-C	w/ red	
3.5	5	5 6 8	Residual Red silty sand	SM	Red	Fine	w/ clay & muscovite	
6	7.5	8 9 8	Residual Same	SM	Red	Fine	w/ muscovite	
8.5	10	5 7 8	Residual Same	sandy ML	Red w/ black	F-C	w/ muscovite	
13.5	15	3 2 3	Residual silty sand	Fine ML	Reddish orange		w/ black w/ muscovite	
18.5	20	9 18 50/6	Residual silty sand		light orange brown w/ black grey			
23.5	25		Auger Refusal at 23' due to bedrock					Fine
28.5	30							
33.5	35							
38.5	40							
43.5	45							

Notes:

Soil Boring Log



Boring ID: B-7

Client:	Date:	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 innovation	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.69997	Depth of Boring: 25	<input checked="" type="checkbox"/> HSA
Longitude: 83.05234	Water Level: _____ Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			Topsoil Gravel Asphalt Concrete NA
1	2.5	4 5 7	Fill silty sandy cl
3.5	5	4 5 7	Fill silty sandy red F-C w/ cl
6	7.5	7 10 8	Residual same SM Red Fine w/ cl
8.5	10	4 4 5	Residual same sandy orange F-C
13.5	15	4 5 6	Residual silty sand pink / orange F-C
18.5	20	4 4 4	Residual same SM pink w/ black Fine w/ mus
23.5	25	4 5 5	Residual same SM light pinkish brown Fine w/ mus
28.5	30		Boring terminated at 25' No bedrock
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: B-9	Date: 2-17-17	Drilling Method
Client:	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Project Number: 86175002	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Site Location: 1000 innovation	Depth of Boring: 25	<input checked="" type="checkbox"/> HSA
Latitude: 34.69392	Water Level: <input type="checkbox"/> Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Longitude: 83.05355	Well Installed: No	<input type="checkbox"/> Air Rotary
Logged By: Nate Hawthorne	Drill Rig: GP#738	<input type="checkbox"/> Rock Core
Driller: Brett Burnette		

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0		4	Topsoil Gravel Asphalt Concrete NA
1	2.5	3 3 3	Fill ^{sandy cl} silty sand - Red F-C
3.5	5	5 6 8	Fill ^{sandy} silty sand - Red F-C w/clay
6	7.5	10 15 17	Residual ^{sandy} silty sand - light Red F-C
8.5	10	4 14 5	Residual ^{orange} silty sands ^{orangeish brown} Dark red w/black Fh
13.5	15	3 13 18	Residual s. lt / sands ^{orangeish red} Reddish orange Fh
18.5	20	3 6 5	Residual silty sands ^{orangeish / dark} Brown / grey Fh
23.5	25	18 14 44	Residual ^{orangeish} SM ^{brown} white Fh
28.5	30		Boring terminated at 25' - No bedrock
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log

Boring (located) et up (distance) (Manassasite 8 AM on site (shallow water) (18 locations) (+ mobilization across creek) (rock)



Boring ID: B-10	Date: 2-17-17	Drilling Method
Client:	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Project Number: 86175002	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Site Location: 1000 innovation	Depth of Boring: 20	<input checked="" type="checkbox"/> HSA
Latitude: 34.69774	Water Level: Feet No water	<input type="checkbox"/> Mud Rotary
Longitude: 83.05405	Well Installed: No	<input type="checkbox"/> Air Rotary
Logged By: Nate Hawthorne	Drill Rig: GP#738	<input type="checkbox"/> Rock Core
Driller: Brett Burnette		

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

~~Office 703 544 8888~~
~~cell 980 819 1434~~ } *for questions about check drilling*

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

1
2
3
4
5
6
7

Depth (ft)	Recovery (inches)	Blows per 6"	Soil Description	opsoil	Gravel	Asphalt	Concrete	NA	
0									
1	2.5	4 5 6	Residual silty sands Red Fme w/ clay						
3.5	5	5 7 8	Residual same SM light red Fme w/ musc						
6	7.5	4 9 13	Residual same sandy ML light red F-C w/ musc						
8.5	10	4 6 7	Residual silty sands Red F-C trace musc						
13.5	15	5 6 4	Residual silty sand reddish orange F						
18.5	20	3 3 3	Residual silty sands pinkish brown F w/ musc						
23.5	25	4 4 5	Residual silty sands reddish orange F w/ musc						
28.5	30		Boring terminated at 20' No bedrock						
33.5	35								
38.5	40								
43.5	45								

Notes:

Soil Boring Log



Boring ID: B-12

Client:	Date:	Drilling Method
Project Number: 86175002	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 innovation	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.69693	Depth of Boring: 10	<input checked="" type="checkbox"/> HSA
Longitude: 83.05232	Water Level: Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			3 Topsoil Gravel Asphalt Concrete NA
1	2.5	3 4 6	Fill silty sands Red F-C root
3.5	5	4 5 5	Residual silty ML orangish red F-C tra
6	7.5	6 7 6	Residual silty ML F-C w/ musc
8.5	10	5 4 3	Fill silty sands Red F-C w/ musc
			Residual SM orangish red Fine w/ musc
13.5	15		boring terminated at 10' . No Bedrock
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: **B-13**

Client:	Date: 2-21-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 innovation	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.69735	Depth of Boring: 20	<input checked="" type="checkbox"/> HSA
Longitude: 83.05162	Water Level: No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

Depth (ft)	Recovery (inches)	Blows per 6"	Topsoil	Gravel	Asphalt	Concrete	NA
0							
1	2.5	5 5 6					
3.5	5	5 5 8					
6	7.5	7 8 8					
8.5	10	5 5 5					
13.5	15	7 8 8					
18.5	20	2 3 3					
23.5	25						
28.5	30						
33.5	35						
38.5	40						
43.5	45						

9" Topsoil

Fill silty sands Red

Same

Same

Residual silty sands white Black

Residual silty sands white Black orange

Residual silty sands Brown white

No Boring terminated at 20'. no bedrock.

Notes:

Soil Boring Log



Boring ID: **B-15**

Client:	Date: 2-20-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: incubation	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude:	Depth of Boring: 25	<input checked="" type="checkbox"/> HSA
Longitude:	Water Level: Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

1
2
3
4
5
6
7

Depth (ft)	Recovery (inches)	Blows per 6"	Topsoil	Gravel	Asphalt	Concrete	NA
0			Topsoil				
1	2.5	5 15 5	Fill silty sands Red				F-C w/ muscovite
3.5	5	4 4 6	Residual silty sands Red				F-C w/ muscovite
6	7.5	9 9 9	Residual silty sands Red				F-C w/ muscovite
8.5	10	4 4 4	Residual silty sands Red				F-C w/ muscovite
13.5	15	4 3 4	Residual silty sands Red				F-C w/ muscovite
18.5	20	3 3 4	Residual silty sands light brown				F-C w/ muscovite
23.5	25	4 4 4	Residual silty sands light brown				F-C w/ muscovite
28.5	30		Boring terminated at 25' No bedrock				
33.5	35						
38.5	40						
43.5	45						

Notes:

Soil Boring Log



Boring ID: B-10		Date: 2-21-12	Drilling Method
Client:		Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Project Number: 86175002		Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Site Location: 1000000000		Depth of Boring: 35	<input checked="" type="checkbox"/> HSA
Latitude:		Water Level: Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Longitude:		Well Installed: No	<input type="checkbox"/> Air Rotary
Logged By: Nate Hawthorne		Drill Rig: GP#738	<input type="checkbox"/> Rock Core
Driller: Brett Burnette			

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			<input checked="" type="checkbox"/> Topsoil <input type="checkbox"/> Gravel <input type="checkbox"/> Asphalt <input type="checkbox"/> Concrete <input type="checkbox"/> NA
1	2.5	3 3 3	Fill silty sands reddish brown
3.5	5	2 1 1	Fill silty sands brown orange
6	7.5	2 2 2	Same
8.5	10	2 2 2	Fill silty sand light brown orange
13.5	15	2 2 3	Residual silty sands light brown white
18.5	20	2 3 4	Same
23.5	25	4 5 5	Residual silty sands brown white fine grain
28.5	30	3 4 5	
33.5	35	4 5 6	Same
38.5	40		Boring terminated at 35' - No bedrock
43.5	45		

Notes:

Soil Boring Log



Boring ID: **B-19**

Client:
 Project Number: **86175002**
 Site Location: **1000 Innovation**
 Latitude:
 Longitude:
 Logged By: **Nate Hawthorne**
 Driller: **Brett Burnette**

Date:
 Auger/WR Refusal: **N/A**
 Boring Diameter: **6 inches**
 Depth of Boring: **25**
 Water Level: **No water** Feet
 Well Installed: **No**
 Drill Rig: **GP#738**

Drilling Method
 Hand Auger
 DPT
 HSA
 Mud Rotary
 Air Rotary
 Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger <input type="checkbox"/> Macro Core <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit				
			Topsoil	Gravel	Asphalt	Concrete	NA
0			Topsoil				
1	2.5	5 6 8	Fill silty sands				F-C w/ red
3.5	5	4 5 6	Fill same	SM	Red		Fine w/ clay
6	7.5	6 7 9	Residual same	sandy ML	orange/red		F-C w/ clay
8.5	10	4 4 5	Residual same	sandy ML	orange/red		F-C
13.5	15	5 6 6	Residual silty sands		dark w/ white		Fine w/ m...
18.5	20	4 5 3	Residual same	SM	dark pink/orange		Fine m...
23.5	25	4 4 4	Residual silty sands		light brown/white		Fine
28.5	30		Boring terminated at 25'. No bedrock.				
33.5	35						
38.5	40						
43.5	45						

Notes:

Soil Boring Log



Boring ID: **B-20**

Client:	Date: 2-21-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: Innovation	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude:	Depth of Boring: 10	<input checked="" type="checkbox"/> HSA
Longitude:	Water Level: No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			2" Topsoil
1	2.5	9 6 5	F.11 silty sand Red Black
3.5	5	13 13 13	Residual silty sand Red Black
6	7.5	4 3 3	Residual silty sands reddish orange Black
8.5	10	4 4 6	Residual silty sand light brown pink white
13.5	15		Boring terminated at 10', No bedrock
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: **B-21**
 Client: _____ Date: **2-21-11**
 Project Number: **86173002** Auger/WR Refusal: **LNA**
 Site Location: **innovation** Boring Diameter: **6 inches**
 Latitude: _____ Depth of Boring: **10**
 Longitude: _____ Water Level: _____ Feet **LNA** No water
 Logged By: **Nate Hawthorne** Well Installed: **No**
 Driller: **Brett Burnette** Drill Rig: **GP#738**

Drilling Method

Hand Auger
 DPT
 HSA
 Mud Rotary
 Air Rotary
 Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger <input type="checkbox"/> Macro Core <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			4' Topsoil _____ Gravel _____ Asphalt _____ Concrete _____ NA
1	2.5	2 2	Fill silty sands Dark Red
3.5	5	2 4 4	Fill silty sands Red
6	7.5	4 5 4	Same
8.5	10	3 4 5	Same
13.5	15		Boring terminated at 10' - No bedrock
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log

Terracon

Boring ID: B-22

Client:

Project Number: 06125002

Site Location: 1000 Innovation

Latitude:

Longitude:

Logged By: Nate Hawthorne

Driller: Brett Burnette

Date: 2-17-17

Auger/WR Refusal:

Boring Diameter: 6 inches

Depth of Boring: 25'

Water Level: 15 Feet No water

Well Installed: No

Drill Rig: GP#738

Drilling Method

- Hand Auger
- DPT
- HSA
- Mud Rotary
- Air Rotary
- Rock Core

Sample Method

- Hand Auger
- Macro Core
- Split Spoon
- Shelby Tube

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

Depth (ft)	Recovery (inches)	Blows per 6"	Description
0			Topsoil
1	2.5	4	Fill silty sands Brown
3.5	5	4	Fill silty sands Red
6	7.5	9	Residual silty sands reddish orange
8.5	10	10	Residual silty sands reddish orange
13.5	15	3	Residual silty sands reddish orange
18.5	20	3	Residual silty sands orange
23.5	25	4	Residual SM orange w/ black
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Boring terminated at 25' No refusal

Notes:

Soil Boring Log



Boring ID: B-23
Client:
Project Number: 36175002
Site Location: Innovation
Latitude:
Longitude:
Logged By: Nate Hawthorne
Driller: Brett Burnette
Date: 2-20-17
Auger/WR Refusal: NA
Boring Diameter: 6 inches
Depth of Boring: 5
Water Level: No water
Well Installed: No
Drill Rig: GP#738

Drilling Method
 Hand Auger
 DPT
 HSA
 Mud Rotary
 Air Rotary
 Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger <input type="checkbox"/> Macro Core <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			3' Topsoil
1	2.5	5 6 7	Gravel _____ Asphalt _____ Concrete _____ NA
3.5	5	5 7 7	Fill 5. sandy ML dark Red 136 brown F-C w/ clay
6	7.5		Fill sandy ML Red F-C w/ clay
8.5	10		Boring terminated at 5' . No bedrock
13.5	15		
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log



Boring ID: B- **24**

Client:	Date:	Drilling Method
Project Number: 8617500 2	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 Innovation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 39.69557	Depth of Boring: 5	<input checked="" type="checkbox"/> HSA
Longitude: 83.05409	Water Level: _____ Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit							
			Topsoil	Gravel	Asphalt	Concrete	NA			
0										
1	2.5	4 4 4	5" Topsoil							
3.5	5	5 7 9	Fill silty sand							
6	7.5		Fill silty sands							
8.5	10									
13.5	15									
18.5	20									
23.5	25									
28.5	30									
33.5	35									
38.5	40									
43.5	45									

Boring terminated at 5' - No bedrock

Notes:

Soil Boring Log



Boring ID: B- **25**

Client:	Date:	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 Innovation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.64691	Depth of Boring: 5	<input checked="" type="checkbox"/> HSA
Longitude: 83.05143	Water Level: _____ Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			Topsoil
1	2.5	9	Gravel Asphalt Concrete NA
3.5	5	10	Fill (S.H.) Sand Red Sand
6	7.5		
8.5	10		Boring terminated at 5'. No bedrock
13.5	15		
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Soil Boring Log

Terracon

Boring ID: B-27

Client:	Date: 7-20-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Site Location: 100 Innovation way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 37.15964	Depth of Boring: 25	<input checked="" type="checkbox"/> HSA
Longitude: 83.06499	Water Level: Feet No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

Depth (ft)	Recovery (inches)	Blows per 6"	Soil Description	Topsoil	Gravel	Asphalt	Concrete	NA
0			Topsoil					
1	2.5	4	Residual silty sands Red					
3.5	5	5	Residual silty sands Red w/ clay					
6	7.5	5	Residual silty sands Red w/ clay					
8.5	10	3	Residual silty sands Red w/ clay					
13.5	15	7	Residual silty sands Reddish orange					
18.5	20	3	Residual silty sands Brownish white					
23.5	25	9	Residual silty sand Brown w/ black					
28.5	30		Boring terminated at 25' - no backhoe					
33.5	35							
38.5	40							
43.5	45							

Notes:

Soil Boring Log

Terracon

Boring ID: B-28

Client:	Date:	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 100 Innovation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.69682	Depth of Boring: 10	<input checked="" type="checkbox"/> HSA
Longitude: 83.0525	Water Level: <input checked="" type="checkbox"/> Feet <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)

Recovery (inches)

Blows per 6"

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

1
2
3
4

Depth (ft)	Recovery (inches)	Blows per 6"	Soil Description	Gravel	Asphalt	Concrete	NA
0			Topsoil				
1	2.5	4 4 4	Fill ^{sandy cl} ^{part} ^{Red}				F-C
3.5	5	4 5 5	Fill ^{sandy cl} ^{Red}				F-C
6	7.5	3 5 17	Fill ^{Residual} ^{sandy cl}				
8.5	10	5 6 5	Fill ^{5. Hy} ^{Sands} ^{Red} ^{white}				F-C
13.5	15		Boring terminated at 10' - No bottom				
18.5	20						
23.5	25						
28.5	30						
33.5	35						
38.5	40						
43.5	45						

Notes:

Soil Boring Log



Boring ID: B-29

Client:	Date: 2-20-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 Insulation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.69836	Depth of Boring: 35 30'	<input checked="" type="checkbox"/> HSA
Longitude: 83.05603	Water Level: Feet No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite Grab	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
						<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit						
			Topsoil	Gravel	Asphalt	Concrete	NA		
0			0						
1	2.5	4 2 3	Fill silty sands						Reddish brown Fine cl
3.5	5	3 3 4	Fill Same						SM Reddish brown Fine w/cl
6	7.5	3 4 5	Residual Fill silty sands						Reddish Brown Fine w/cl
8.5	10	2 3 4	Residual Same						Sandy ML Red F-C w/cl
13.5	15	with water	Residual sandy ML						Red/Orange F-C w/cl
18.5	20	2 2 4	Residual silty sands						SM orangish Brown/white F-C
23.5	25	2 3 4	Residual Same						SM orange/white Fine
28.5	30	4 4 6	Residual Same						SM orangish/brown/white Fine
33.5	35		Boring terminated at 30'. No bedrock.						
38.5	40								
43.5	45								

Notes:

Soil Boring Log



Boring ID: B-30

Client:	Date: 2-20-17	Drilling Method
Project Number: 86175002	Auger/WR Refusal: NA	<input type="checkbox"/> Hand Auger
Site Location: 1000 Innovation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.70112	Depth of Boring: 20'	<input checked="" type="checkbox"/> HSA
Longitude: 83.05714	Water Level: Feet No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit

Depth (ft)	Recovery (inches)	Blows per 6"	Soil Description	Gravel	Asphalt	Concrete	NA
0			2" Topsoil				
1	2.5	5 7 10	Fill silty sands Red Fine w/ muscovite				
3.5	5	5 6 7	Residual silty sands Red Orange Fine w/ muscovite				
6	7.5	6 7 9	Residual sandy ML light red F-C w/ muscovite				
8.5	10	4 4 5	Residual sandy ML reddish orange				
13.5	15	3 4 3	Residual sandy ML reddish orange w/ black w/ muscovite				
18.5	20	5 5 9	Residual silty sands Brown/Pink/Black w/ muscovite				
23.5	25		Boring terminated at 20'. No bedrock				
28.5	30						
33.5	35						
38.5	40						
43.5	45						

Notes:

Soil Boring Log



Boring ID: **B-32**

Client:	Date:	Drilling Method
Project Number: 86175002	Auger/WR Refusal: <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Hand Auger
Site Location: 100 Innovation Way	Boring Diameter: 6 inches	<input type="checkbox"/> DPT
Latitude: 34.70155	Depth of Boring: 5	<input checked="" type="checkbox"/> HSA
Longitude: 83.05524	Water Level: <input checked="" type="checkbox"/> No water	<input type="checkbox"/> Mud Rotary
Logged By: Nate Hawthorne	Well Installed: No	<input type="checkbox"/> Air Rotary
Driller: Brett Burnette	Drill Rig: GP#738	<input type="checkbox"/> Rock Core

Depth	Grab/Composite	Time	Date	Time	DTW: ft BLS / ft bTOC	Sample Method
	Grab					<input type="checkbox"/> Hand Auger
						<input type="checkbox"/> Macro Core
						<input checked="" type="checkbox"/> Split Spoon
						<input type="checkbox"/> Shelby Tube

Depth (ft)	Recovery (inches)	Blows per 6"	MINOR MAJOR GRAIN SIZE COMPONENTS (USCS CLASSIFICATION), sand size, color, moisture, density, other components, structure, angularity, odor, geologic unit
0			6" Topsoil
1	2.5	2 13 4	Fill silty sands dark red FC w/ clay
3.5	5	4 5 9	Fill silty sands red FC
6	7.5		
8.5	10		Boring terminated at 5' - No bedrock
13.5	15		
18.5	20		
23.5	25		
28.5	30		
33.5	35		
38.5	40		
43.5	45		

Notes:

Company	Name	Address	Phone	Mobile	Email
Baker's Construction Services	Emily Chapman	P O Box 417 Piney Flats, TN 37686	423-538-4400		emilybcs@earthlink.net
Blair Construction	Dale Moody	4308 Evans to Locks Road Evans, GA 30809	706-868-1950 x206		dale@blairconstruction.us
BMCO Construction	Riley Tilley, Tonya Beal	P O Box 1361 Lumberton, NC 28359	910-738-6693		riley.tilley@bmcoconstruction.com ; tonya@bmcoconstruction.com
Clary Hood Inc.	Andy Painter, Justin Pearson	150 Conway Black Road Spartanburg, SC 29307	864-579-8881		Andy@claryhood.com ; justin@claryhood.com
Graham County Land Co.	Storm Jordan	750 Tallulah Road Robbinsville, NC 28771	828-479-3581		storm@gclnc.com
Ledford & Parker	Cameron Bethel	2053 Hwy 64E Hayesville, NC 28904	828-389-3900		ledfordandparkerjl@gmail.com ; cbethel@brmemc.net
Loftis Corp	F. M. Freeland, Ed Loftis	654 St. Mark Road Taylors, SC 29689	864-292-9088	864-616-5392	fmfreeland@loftiscorp.com ; ealoflis@loftiscorp.com
Martin Bros. Const. Co. Inc.	Bill Mimms	5497 S. Frontage Rd. PO Box 5497 Gray Court, SC 29645	864-876-2634		Bmimms@mbccinc.com ; twood@mbccinc.com
Morgan Corp.	Bob Mina, Steve Teaster, Bill Heape	1800 E. Main Street Duncan, SC 29334	864-433-8800		bmina@morgan-corp.com ; steaster@morgan-corp.com ; bheape@morgan-corp.com
Plateau Excavation	Joe Davis	375 Lee Industrial Blvd. Austell, GA 30168	864-506-6788		jdavis@plateauexcavation.com
Richardson Construction	Lauren Richardson Pittard Donnette Moak	6806 Monticello Road Columbia, SC 29230	803-786-9741	843-442-8363	estimator@richdirt.com ; lpittard@richdirt.com ; dmoak@richdirt.com
Simpson's Trucking & Grading	David Hammond	1364 Candler Road Gainesville, GA 30507	770-536-4731	678-858-9769	dhammond@simpsonstrucking.com
Thrift Brothers Inc.	Mike Cox	PO Box 1293 Seneca, SC 29679	864-882-3931		mike@thriftbrothers.com
Thrift Development Corp.	Gary Thrift, Ryan Miller	P O Box 2125 Seneca, SC 29679	864-882-4582		gthrift@thriftdev.com ; rmiller@thriftdev.com
Thunder Contracting	Alex Keith	18001 Great Smokey Mtn Expway, Waynesville, NC	828-734-8097		akeith@thunderdisaster.com
Vecellio & Grogan, Inc.	Allison Michael	P O Box 2438 Beckley, WV 25802	304-252-6575		allison.michael@vecellioGrogan.com
J. C. Wilkie	John Brock	349 Buck Corley Court Lexington, SC 29073	803-530-2789		jbrock4@gmail.com
The Blue Book - Contractor's Register, Inc.	Erin McVeigh	P O Box 500 Jefferson Valley, NY 10535	800-431-2584		emcveigh@thebluebook.com
Contractors Market Data Group, LLC	Morgan O'Banion	30 Technology Pkwy South, Suite 100, Norcross, GA 30092	800-364-2059		mobanion@isgft.com
Upstate Grading & Engineering, Inc.	Carter Davis	114 Amber Drive, Inman, Sc 29349	864-503-0957		c.davis@unitedforestinc.com